

CLAIMS

1. A method for reconstructing an image from sets of projections of this image, successively comprising:

- 5       - a series of successive wavelet decompositions of the sets of projections providing thumbnail images of the sets of the projections, comprising images of an approximation (AA) and successive series (Dd, Dh, Dv) of homologous details of each set,
- 10       - in each of the series and successively for the thumbnail images of details having an increasing number of points, a search for insignificant portions estimated to be lacking in content, and a search for homothetic portions of the insignificant portions in
- 15 each of the thumbnail images of details which follow in the series;
- back-projections of the thumbnail images of the thumbnail projection sets of the image to be reconstructed, with omission of the back-projections
- 20 for all the insignificant portions and all the homothetic portions,
- and a combination of thumbnail images to be reconstructed by decomposition inversion giving said image.

25

2. The method for reconstructing an image according to claim 1, characterized in that it comprises a selection of regions of angles ( $\theta$ ) of the sets of projections which are used in the back-
- 30 projections.

B14194.3 JCI

3. The method for reconstructing an image according to claim 2, characterized in that it comprises the selection of a number of projections which are used in the back-projection.

5

4. The method for reconstructing an image according to claim 2, characterized in that the selection of the angle regions is performed according to a support of a Fourier transform of the wavelet  
10 decomposed sets of projections.

5. The method for reconstructing an image according to claim 3, characterized in that the selection of the number of projections is performed  
15 according to the maximum frequencies of a support of a Fourier transform of the wavelet decomposed projection sets.